



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,202	12/28/2001	Hong Sung Song	049128-5054	5389
9629	7590	12/24/2003	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			LIANG, REGINA	
			ART UNIT	PAPER NUMBER
			2674	3
DATE MAILED: 12/24/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/029,202

Applicant(s)

SONG, HONG SUNG

Examiner

Regina Liang

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 9, 10, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (Figs. 1-9, page 2, line 16 to page 8, line 4 of the specification) in view of Taguchi et al (US. PAT. NO. 5,745,089 hereinafter Taguchi).

As to claims 1 and 17-20, Fig. 1 of the admitted prior art discloses a LCD device comprising a LCD panel (6), a digital video card (1), a controller (2) for generating a dot clock signals and a gate start pulse using the vertical and horizontal synchronizing signals, a data driver (3) and a gate driver (5). The admitted prior art does not disclose the gate driver for applying scanning signals having at least two signal voltage levels to gate lines. However, Taguchi teaches a gate driver (Y driving circuit 102 in Fig. 2) for applying scanning signals having at least two signal voltage levels to gate lines (Va1, Va2 in Fig. 1) in response to the gate start pulse (see Fig. 21). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the gate driver of the admitted prior art to apply scanning signals having at least two signal voltage levels to gate lines in response to the gate start pulse as taught by Taguchi such that the frequency band in use is narrowed, the crosstalk is reduced, and false

Art Unit: 2674

images and flicker on the display screen can be suppressed (see the abstract of Taguchi). The admitted prior art as modified by Taguchi does not explicitly disclose the controller generating a dual gate start pulse, and the gate driver for applying scanning signals having at least two signal voltage levels to gate lines in response to the dual gate start pulse. However, Figs. 21, 22 of Taguchi teaches the gate driver shifting the voltage output Va2 and Va1 successively to gate lines in response to the Y horizontal clock, which is in the same manner as applicant to apply scanning signals having at least two signal voltage levels to gate lines in response to the dual gate start pulse. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to realize the admitted prior art as modified by Taguchi having a dual gate start pulse and the gate driver for applying scanning signals having at least two signal voltage levels to gate lines in response to the dual gate start pulse as claimed.

As to claim 2, Fig. 22 of Taguchi teaches the gate driver including a shift register, and a level shifter for shifting voltages having a first level and a second level different from the first level.

As to claims 3, 9, Fig. 3 of the admitted prior art teaches a storage capacitor.

As to claims 4, 10, the admitted prior art teaches the pixel voltage is a different polarity for each gate line.

3. Claims 5-8, 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art and Taguchi as applied to claims 1, 3, 9 17 above, and further in view of Takeda et al (US. PAT. NO. 4,651,148 hereinafter Takeda).

As to claims 5, 11, the admitted prior art as modified by Taguchi does not disclose the shifted voltage level of the scanning pulse is applied to the gate lines during at least two consecutive horizontal period signals. However, Fig. 4 of Takeda teaches the voltage level of the scanning pulse is applied to the gate lines during at least two consecutive horizontal period signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art as modified by Taguchi to have the shifted voltage level of the scanning pulse to be applied to the gate lines during at least two consecutive horizontal period signals so as to provide a driving method that effectively minimizes the voltage decline caused by incomplete charge against the display picture element electrodes through the switching transistors, and effectively prevents possible degradation of the display characteristics (see col. 4, lines 46-55 of Takeda).

As to claims 6-8, 12-16, Taguchi teaches the voltage level of the scanning pulse has at least two different levels, Takeda teaches apply the voltage level of the scanning pulse to the gate lines during two consecutive horizontal period signals. Thus, the admitted prior art as modified by Taguchi and Takeda have the voltage level of the scanning pulse during a second horizontal period signal is larger than or more than twice the voltage level of the scanning pulse during the first horizontal period signal as claimed.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Art Unit: 2674

Shibahara (US. PAT. NO. 5,526,012) teaches a method for driving active matrix LCD display.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (703) 305-4719. The examiner can normally be reached on Monday-Friday from 9AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
REGINA LIANG  
PRIMARY EXAMINER  
ART UNIT 2674

RL  
12/18/03